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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,615	12/22/1999	MASAO KAWAGUCHI	49375(868)	6371

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EXAMINER

BUEKER, RICHARD R

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 01/28/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/470,615

Applicant(s)

KAWAGUCHI, MASAO

Examiner

Richard Bueker

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1763

paper no. 12

1-28-03

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Claims 13, 14, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "a long axis of the support members" is vague and indefinite because it does not properly define the recited axis. Many axes of rotation can be considered to pass through each support member, and an axis of rotation need not even pass through a support member. The claims should define which particular axis is intended. Also, only one axis is recited as belonging to plural support members, which makes it unclear which axis is being referred to.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 13-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mears. Mears discloses a wafer holder comprising a stage for holding the wafer, a shaft member for angularly displacing the stage that is bearing the substrate to a position where the wafer is held vertically, a plurality of support members are provided so as to protrude from the stage surface for supporting an end of the wafer while the wafer is held vertically, and means

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for moving the support members. The ion implantation apparatus of Mears is inherently a film forming apparatus, because the dictionary definition of "film" is "an exceedingly thin layer", and Mears apparatus creates a thin implanted surface layer in a treated wafer. The wafer holder of Mears is at least inherently capable of holding a wafer in a coating apparatus, and it is noted that the limitation of "which mechanism is used in a film forming apparatus" is a recitation of intended use that does not limit the claimed substrate holder to use only in the recited coating apparatus.

Regarding the indefiniteness rejection of the phrase "a long axis", applicant has argued that the meaning of this phrase is clear from the specification at pages 10 and 11, and from Figs. 2 and 3. It is noted, however, that the rejection is not made under the first paragraph of 35 U.S.C. 112, and the disclosure of the specification is not questioned. The rejection is directed to the claim language only. Applicant has argued that it is clear that the Z axis of the support pins would correspond to the straight line or axis that extends along "the longest dimension" of the support pin, and that it is not uncommon to refer to the longest dimension as "the long axis". It is noted, however, that the claims recite "a long axis", which is not the same as "the longest axis" or even "the long axis". The phrase "a long axis" can refer to any axis that is relatively long, even if it is not "the longest axis". It is noted the word "long" is a relative term, and subject to differing interpretations. It is noted that applicant in his comments has given a good description of the meaning of the word "axis". In its broadest interpretation it can mean any imaginary line that an object can be imagined to rotate about, and the axis need not pass through the object.

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Regarding Mears, applicant has argued that Mears' support members are designed to have a significant amount of contact with the wafer. It is noted, however, that the support members of Mears do support the edge of the wafer, which is the end surface of the substrate, and some of the supports members are positioned to support the part of the wafer edge that faces downwards as recited in claims 1 and 2. The claims as written do not exclude the presence of support members on all sides of the substrate.

Applicant has argued that the fingers of Mears function as a clamping mechanism rather than a supporting mechanism as recited in claim 1. It is noted, however, that the clamping fingers of Mears do indeed support the substrate. Also, while the fingers of Mears are located on all side of the substrate, they still clearly do meet the recited limitation of "so as to support one end surface of the substrate, where said one end surface is the surface which faces downwards when the stage is angularly displace". The fingers of Mears do support the downward facing end surface. If not, the substrate would fall off the stage. It is noted that, by virtue of the "comprising" language of claim 1, the use of additional support fingers on the end surface facing upward is not excluded by the claims. The claims as written do ^{not} exclude the use of support members that also function as clamp members. note paper 14,
page 7, lines
3-5.

Applicant has argued that the fingers of Mears would cause cracking and peeling. It is noted, however, that there is no indication in Mears that the film formed on his wafers cracks or peels. Applicant has argued that Mears' fingers "angle toward the wafer" and "make significant contact with the wafer surface". It is noted, however, that Figs. 7 and 8 of Mears illustrate that the fingers only touch the side edge of the wafer

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and do not significantly overhang the wafer. Also, the claims as written do not contain limitations that are commensurate in scope with these arguments.

Regarding claim 3, it is noted that the moving means of Mears actually does move the support members "toward and away from the shaft member" as recited in claim 3. The shaft member of Mears is shaft 4 of Fig. 2 of Mears. Regarding claim 5, each finger of Mears has its own independent moving means 57 (see Fig. 8).

Regarding claim 13, it is noted that the phrase "to cause the support member to move in one direction" does not require *plural* support members to move in the *same* direction.

Regarding claim 14, it is noted that the rotational movement illustrated in Fig 8 of Mears would cause the fingers of Mears to move in a direction generally perpendicular to the longest axis of the fingers. Regarding claim 15, it is noted that Fig. 8 of Mears shows his fingers as moving inward and outward in directions that are generally perpendicular to the *end surface* of the substrate. Regarding claim 16, it is noted that, as previously discussed, the phrase "a long axis" does not make clear which long axis is being referred to. The fingers of Mears do rotate about an axis that can be considered "a long axis".

Applicant has argued that Mears' wafer holder is rotated during processing, and therefore "it is not physically possible for a wafer in Mears to be only supported from one end surface of the wafer". This argument is not commensurate in scope with the claims as written. As noted above, the claims do not require that the substrate be "only supported from one end surface" as argued.

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Regarding claim 2, applicant has argued that "the fingers or members of Mears are moved inwardly or outwardly radially with respect to the wafer. Thus, Mears *cannot* disclose, teach or suggest rotationally moving the support members of the stage". It is noted, however, that Mears teaches (see Fig. 8 and col. 5, line 47 to col. 6, line 52, particularly col. 6, lines 7-12, for example) that the moving means for his support members (fingers) causes the support members to rotationally move on the stage. They "rotationally move" about pivot point P_a .

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (703) 308-1895. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Richard Bueker
Richard Bueker
Primary Examiner
Art Unit 1763

January 27, 2003